

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

PCTWORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁵ : C08F 8/00	A3	(11) International Publication Number: WO 94/03503 (43) International Publication Date: 17 February 1994 (17.02.94)
(21) International Application Number: PCT/GB93/01472 (22) International Filing Date: 14 July 1993 (14.07.93) (30) Priority data: 9216156.1 30 July 1992 (30.07.92) GB 9216157.9 30 July 1992 (30.07.92) GB (71) Applicant (for all designated States except US): IMPERIAL CHEMICAL INDUSTRIES PLC [GB/GB]; Imperial Chemical House, Millbank, London SW1P 3JF (GB). (72) Inventors; and (75) Inventors/Applicants (for US only) : BARNES, David, John [GB/GB]; 1 Bowmere Close, Tarporley, Cheshire CW6 0UA (GB). GILDAY, John, Peter [GB/GB]; 48 Priory Road, Linlithgow, West Lothian EH49 6BS (GB).		(74) Agents: THOMAS, Ieuan et al.; ICI Group Patents Services Dept., P.O. Box 6, Shire Park, Bessemer Road, Welwyn Garden City, Hertfordshire AL7 1HD (GB). (81) Designated States: AU, BR, CA, FI, JP, KR, RU, US, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i> (88) Date of publication of the international search report: 31 March 1994 (31.03.94)
(54) Title: FLUORINATED POLYMERS (57) Abstract A fluoroorganic polymeric material which comprises a polymeric chain and at least one group pendent from the polymeric chain, in which the group pendent from the polymeric chain comprises at least one ion-exchange group or group convertible thereto, wherein the EW distribution is greater than 1.05, and wherein the ion-exchange group or group convertible thereto is preferably linked to the polymeric chain through an acyclic secondary carbon atom, for use as an ion-exchange membrane in an electrochemical device.		

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AT	Austria	FR	France	MR	Mauritania
AU	Australia	GA	Gabon	MW	Malawi
BB	Barbados	GB	United Kingdom	NE	Niger
BE	Belgium	GN	Guinea	NL	Netherlands
BF	Burkina Faso	GR	Greece	NO	Norway
BG	Bulgaria	HU	Hungary	NZ	New Zealand
BJ	Benin	IE	Ireland	PL	Poland
BR	Brazil	IT	Italy	PT	Portugal
BY	Belarus	JP	Japan	RO	Romania
CA	Canada	KP	Democratic People's Republic of Korea	RU	Russian Federation
CF	Central African Republic	KR	Republic of Korea	SD	Sudan
CG	Congo	KZ	Kazakhstan	SE	Sweden
CH	Switzerland	LJ	Liechtenstein	SI	Slovenia
CI	Côte d'Ivoire	LK	Sri Lanka	SK	Slovak Republic
CM	Cameroon	LU	Luxembourg	SN	Senegal
CN	China	LV	Latvia	TD	Chad
CS	Czechoslovakia	MC	Monaco	TC	Togo
CZ	Czech Republic	MG	Madagascar	UA	Ukraine
DE	Germany	ML	Mali	US	United States of America
DK	Denmark	MN	Mongolia	UZ	Uzbekistan
ES	Spain			VN	Viet Nam
FI	Finland				

INTERNATIONAL SEARCH REPORT

Int. .onal Application No
PCT/GB 93/01472

A. CLASSIFICATION OF SUBJECT MATTER
IPC 5 C08F8/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 5 C08F C08J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US,A,4 209 367 (MAOMI SEKO) 24 June 1980 see the whole document ---	1-21
X	EP,A,0 041 735 (THE DOW CHEMICAL COMPANY) 16 December 1981 see the whole document ---	1-7
X	US,A,5 066 682 (MAKOTO MIYAZAKI) 19 November 1991 see the whole document ---	1-7
X	US,A,4 508 603 (HIROSHI UKIHASHI) 2 April 1985 see the whole document ---	1-7
	-/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

20 January 1994

Date of mailing of the international search report

07. 02. 94

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax (+31-70) 340-3016

Authorized officer

Permentier, W

INTERNATIONAL SEARCH REPORT

Int. l. Application No

PCT/GB 93/01472

C(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP,A,0 041 733 (THE DOW CHEMICAL COMPANY) 16 December 1981 see claims 1-10 & US,A,4 358 545 cited in the application ---	1
A	US,A,4 298 699 (TATSURO ASAWA) 3 November 1981 see claims 1-11 ---	1
A	FR,A,2 388 012 (DU PONT DE NEMOURS) 17 November 1978 see claims 1-16 ---	1
A	US,A,3 882 093 (R. J. CAVANAUGH) 6 May 1975 see column 1, line 21 - line 38 see column 2, line 21 - line 68 see column 3, line 15 - line 40; claims 1,2 ---	1
A	EP,A,0 025 644 (ASAHI GLASS K.K.) 25 March 1981 see claim 1 ---	1
A	PATENT ABSTRACTS OF JAPAN vol. 6, no. 177 (C-124)(1055) 11 September 1982 & JP,A,57 094 003 (TOYO SODA KOGYO K.K.) 11 June 1982 see abstract -----	1

INTERNATIONAL SEARCH REPORT

Information on patent family members

Int. Application No

PCT/GB 93/01472

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US-A-4209367	24-06-80	JP-C- 1236311	17-10-84
		JP-A- 52120983	11-10-77
		JP-B- 57007166	09-02-82
		CA-A- 1100435	05-05-81
EP-A-0041735	16-12-81	US-A- 4330654	18-05-82
		AU-B- 540529	22-11-84
		AU-A- 7160181	17-12-81
		CA-A- 1212498	07-10-86
		JP-C- 1591414	30-11-90
		JP-B- 2016326	16-04-90
		JP-A- 57028119	15-02-82
US-A-5066682	19-11-91	JP-A- 3006240	11-01-91
US-A-4508603	02-04-85	NONE	
EP-A-0041733	16-12-81	US-A- 4358545	09-11-82
		AT-T- 11153	15-01-85
		AU-B- 543308	18-04-85
		AU-A- 7160281	17-12-81
		CA-A- 1180849	08-01-85
		JP-C- 1611789	30-07-91
		JP-B- 2037936	28-08-90
		JP-A- 57025331	10-02-82
		US-A- 4417969	29-11-83
		US-A- 4478695	23-10-84
US-A-4358545	09-11-82	AT-T- 11153	15-01-85
		AU-B- 543308	18-04-85
		AU-A- 7160281	17-12-81
		CA-A- 1180849	08-01-85
		EP-A,B 0041733	16-12-81
		JP-C- 1611789	30-07-91
		JP-B- 2037936	28-08-90
		JP-A- 57025331	10-02-82
		US-A- 4417969	29-11-83
		US-A- 4478695	23-10-84
US-A-4298699	03-11-81	NONE	

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 93/01472

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
FR-A-2388012	17-11-78	AU-A- 1304888	16-06-88
		AU-B- 525335	04-11-82
		AU-A- 3516478	25-10-79
		BE-A- 866121	19-10-78
		CA-A- 1133425	12-10-82
		DE-A, C 2817344	26-10-78
		GB-A- 1604102	02-12-81
		JP-C- 1506703	13-07-89
		JP-A- 53132089	17-11-78
		JP-B- 63056257	07-11-88
		JP-A- 59211583	30-11-84
		NL-A- 7804221	24-10-78
		SU-A- 1165239	30-06-85
		US-A- 4487668	11-12-84
US-A-3882093	06-05-75	BE-A- 824046	02-05-75
		CA-A- 1037057	22-08-78
		DE-A- 2461675	10-07-75
		FR-A, B 2256154	25-07-75
		GB-A- 1458641	15-12-76
		JP-C- 943796	15-03-79
		JP-A- 50096524	31-07-75
		JP-B- 52010851	26-03-77
EP-A-0025644	25-03-81	NL-A- 7417058	04-07-75
		JP-A- 56029685	25-03-81
		CA-A- 1171385	24-07-84
		US-A- 4340680	20-07-82